

# Introducing Novara GeoSolutions Services

COMMITTED TO PROVIDING THE BEST ASSET,  
COMPLIANCE AND INTEGRITY MANAGEMENT  
SOLUTIONS FOR THE OIL & GAS INDUSTRY

← IMPROVE SAFETY

← LOWER OPERATIONAL COSTS

← REGULATORY COMPLIANCE ASSURANCE

**Novara GeoSolutions (Novara) is a wholly owned subsidiary within the highly diversified CHA Consulting, Inc. Together we share a collective commitment to responsibly improve the world we live in.**

The Oil & Gas industry is endlessly challenged by ever-changing regulations, mounting public scrutiny, an attrition of workforce and experience, and looking to ensure public safety and system reliability through an increased focus on risk and integrity management. One of our core strengths is our ability to adapt to the specific needs of our clients and to bring forward the appropriate subject matter expertise, experience and technology solutions to meet those diverse needs.

Novara has been serving the Oil & Gas industry for more than 30 years. Since its founding in 1986, Novara has been providing consulting, technical services and geospatial-based software solutions for pipeline and utility asset management, integrity management and regulatory compliance. During this time, Novara has worked with hundreds of operators of crude oil, refined product and other hazardous liquid pipelines as well as natural gas pipelines; and regional and local utilities. This includes support for integrated entities and complex operations that extend across state lines and that fall under the jurisdictions of multiple regulatory agencies.

In doing so, the company, its consultants and technologists have become well-versed with the PHMSA Pipeline Safety Regulations (49 CFR §191 - §195) as well as the local state regulations that have exceeded those minimum standards. Additionally, our staff works diligently to keep current with the alert notices, advisory bulletins, and notices of proposed rulemaking that could impact an operator's current and/or future operations.

What we offer to the industry is expert consulting, regulatory credibility and compliance support, development of integrity management plans, geospatial services, staff augmentation, and scalable and extensible software solutions.

# Introducing Novara GeoSolutions Services

## Regulatory compliance

Learn how Novara has a proven track record of advising companies on regulatory compliance, auditing, development, and implementation of pipeline safety compliance programs.

## Integrity management

Novara's experience is paired with the vast engineering experience of our parent company, CHA Consulting, Inc., to create the best integrity management support offerings available.

## Geospatial services

Our talented team of geospatial professionals is driven by customer satisfaction and offers the industry experience and technical expertise to tackle any project.

## Staff augmentation

Novara can be an extension of your team, so you can get projects completed quickly and efficiently!

## Technology solutions

As a technology solutions provider, Novara has long been committed to providing geospatial-based solutions — built upon and fully leveraging the Esri technology platform — for asset, compliance and integrity management.

## BENEFITS

- > Holistic service offerings
- > Long-time industry support
- > Proven track record of success
- > Regulatory expertise and credibility
- > Industry best practice solutions
- > Priority focus is given to client and partner success
- > Successful and proven Total Asset Life Cycle solutions

## OUR SOFTWARE SOLUTIONS INCLUDE:

- Asset data management
- Data alignment, input and integration
- Planning, engineering, and design support
- Regulatory compliance
- Integrity management
- Operational awareness/ decision support
- Mobile solutions for field operations

**CALL US TODAY FOR MORE INFORMATION ON THIS POWERFUL SOLUTION!**

# Regulatory Compliance

OPERATING AND KEEPING PACE WITH EVER-CHANGING REGULATION AND ITS IMPACT ON YOUR OPERATIONS HAS NEVER BEEN MORE CHALLENGING

30+ YEARS SERVING THE INDUSTRY

REGULATORY EXPERTISE

STRONG CHA COMPANIES BACKING

**Novara GeoSolutions (Novara) has a 30+ year history and proven track record of advising companies on regulatory compliance and the auditing, development and implementation of pipeline safety compliance programs.**

We partner with clients with the implementation of best practice regulatory compliance, integrity management, and safety management system solutions. This includes support for multiple group entities and complex asset operations extending across multiple states and falling under the jurisdiction and oversight of multiple regulatory agencies. The company, its regulatory compliance experts, and technologists are well-versed with both PHMSA and local state regulations, and further, they keep current regarding the impact that inspection protocols, frequently asked questions (FAQs), NTSB incident investigation reports, advisory bulletins, notices of proposed rulemaking, and enforcement guidelines may have on the operator's compliance with those regulations.

Novara provides a comprehensive scope of regulatory compliance and assurance services to ensure the operator's understanding of the federal and state regulations under which they must operate and comply; to keep pace with regulatory changes and their organizational, operational, financial and compliance impacts; with compliance program and activity management; and with audit and post inspection response assistance. The results of our services empower field and office staff, create transparency within the organization, and engage executives so they take a proactive and strategic approach to regulatory compliance.

Novara works with hazardous liquid pipelines, natural gas transmission and gathering pipelines, and natural gas distribution systems, which are all heavily regulated by USDOT's Pipeline and Hazardous Materials Safety Administration (PHMSA), plus state pipeline safety organizations charged with local industry oversight responsibilities.

# Regulatory Compliance

## Interpretation and guidance

Interpretation and guidance are offered to ensure our customers' understanding of the federal minimum standards (as well as a state's regulatory exceedance of those regulations) under which they must operate and comply with.

## Compliance programs

Novara's compliance program development and implementation support for PHMSA 49 CFR § 192 & § 195 code compliance requirements includes damage prevention, emergency response, operations & maintenance, and public awareness. This also includes a compliance program review, gap analysis, and improvement recommendations as well as compliance auditing in preparation for both integrated and program specific federal and state inspection.

## Integrity management programs

Novara offers integrity management program development (and update) for hazardous liquid pipelines, gas transmission and gathering pipelines, distribution systems, and natural gas underground storage facilities.

**ANALYSIS AND CLASSIFICATION OF COMPLEX SYSTEM ASSETS — AT THE UPSTREAM, MIDSTREAM AND DOWNSTREAM — FOR JURISDICTIONAL APPLICABILITY.**

## Post regulatory inspection support

Novara provides post regulatory inspection support to help reconcile program and/or procedural deficiencies (violations) and follow-on agency response.

## Safety management systems assessments

Novara offers safety management systems assessment (gap analysis of policies, processes, procedures and practices), guidance and implementation support in alignment with the guidelines expressed within API RP 1173.

## Management of Change (MOC) program

Novara's Management of Change (MOC) program development and implementation support helps to ensure that safety, health and environmental risks are controlled when a company makes changes in their pipeline system assets, documentation, personnel, or operating programs and procedures.

## BENEFITS

- > Strong backing from our parent company, CHA Consulting, Inc.
- > Regulatory compliance assurance
- > Effective, efficient, and cost reducing solutions
- > Best practice integrity management support
- > Trusted in a variety of industries

**CALL US TO TODAY TO LEARN HOW YOU CAN IMPROVE YOUR REGULATORY COMPLIANCE!**



# Integrity Management Services

IMPLEMENT COMPREHENSIVE INTEGRITY MANAGEMENT PROGRAMS FOR ADVANCED PIPELINE SAFETY MEASURES

REGULATORY UNDERSTANDING

STRONG CHA COMPANIES BACKING

PROVEN IM BEST PRACTICES

**Novara GeoSolutions (Novara) has been providing consulting, technical services and geospatial-based software solutions for over 30 years for pipeline and utility asset management, integrity management and regulatory compliance.**

Novara's experience is paired with the vast engineering experience of our parent company, CHA Consulting, Inc., to create the best integrity management support offerings available. The company, its regulatory and integrity management experts, and technologists are well-versed with federal and state integrity management regulations and global industry best practices. We recognize that an operator's integrity management program is the cornerstone in the management of risk and safety performance. It is critical to preventing system failures, injuries, property and environmental damage and other serious consequences.

Pipeline safety regulations include requirements for operators of hazardous liquid, natural and other gas transmission and distribution pipelines to develop and implement comprehensive integrity management programs. These integrity management (IM) regulations are codified in Title 49 of the Code of Federal Regulations (CFR) Part 195, § 195.452 for hazardous liquid pipelines, Part 192, Subpart O for gas transmission pipelines, and Part 192, Subpart P for gas distribution pipelines.

# Integrity Management Services

## Natural Gas HCA/MCA Analysis

Novara provides in-depth consulting, engineering, field and analytical services to assess and delineate natural gas high consequence areas (HCAs) along an operator's pipeline in accordance with 49 CFR §192.903 and/or in accordance with moderate consequence area (MCA) adjustment. Our services include pipeline centerline routing and attribute analysis, structure and identified site identification, confirmation and analysis, Potential Impact Radius (PIR) calculation, HCA delineation, "legacy to current" HCA change analysis, final reporting of findings and observations, and recommendations for follow-up actions.

## Class Location

We calculate and assess Class 1, 2, 3 & 4 locations, including clustering adjustment for Class 2, 3 & 4 locations in accordance with 49 CFR § 192.5. Our services include pipeline centerline routing and attribute analysis, structure, building and well-defined area identification, sliding mile analysis, 4-story building and clustering class adjustments, "legacy to current" class location change analysis, final reporting of findings and observations, and recommendations for follow-up actions.

## Liquids Pipeline HCA Impact Analysis

This service includes pipeline centerline routing and attribute analysis, HCA identification and analysis, "worst-case" outflow modeling and analysis, release/spill modeling and dispersion analyses to include overland spill modeling and analysis for hazardous liquid products and/or dispersion, liquid pooling, flammability analysis for high vapor pressure (HVP) products, confirmatory HCA impact assessment to identify the pipelines and pipeline segments that could reasonably negatively impact an HCA in the event of a product release, "legacy to current" HCA change analysis, final reporting of findings and observations, and recommendations for follow-up actions.

## Average Occupancy & Total Occupancy Count (AOC, TOC) Calculation

Novara assesses AOCs, TOCs along segments of an operator's pipeline to support prioritization and planning for integrity assessments, replacement projects, and other repair and rehabilitation activities. These services include pipeline centerline routing and attribute analysis, buffering, structure and building or identified site identification, occupancy analysis, AOC and/or TOC calculation and delineation by specified segment(s), and final reporting of findings and observations.

## Pipeline Records Review, Interpretation & Validation

We provide complete services for pipeline centerline survey and pipeline data interpretation, automation, migration and integration in support of MAOP analysis and substantiation. These services include assessing historic records and identifying data elements critical to PHMSA's "TVC" requirements for pipelines. We can assist pipeline operators in updating data to help ensure safe and effective operations and to support overall regulatory compliance.

## MAOP Validation/Verification & Reporting

Industry-leading MAOP utility that not only effectively calculates and reports pipeline MAOP but also produces detailed data validation reports that help identify where critical data elements necessary for establishing MAOP of your pipelines may not be accurate or complete. We also offer consulting, engineering, field and technologically enabled geospatial services to support the validation of these critical data elements.

## IMP Development & Update

Novara's regulatory and integrity management consulting helps to develop integrity management programs for hazardous liquid pipelines (LIMP), gas transmission and gathering pipelines

(TIMP), distribution systems (DIMP), and natural gas underground storage facilities.

## Inline (ILI) & Above Ground Survey Data Management, Alignment & Analysis

Novara offers consulting, engineering, field and analytical services for survey data management including establishing complete survey standards that govern the collection of data along the pipeline, whether those surveys are being performed as part of an integrity analysis, general field survey, route location survey, pipeline construction survey, ROW survey or environmental study. Our services also include the alignment of survey data to a linear network model, which is a critical step to integrating survey data with existing relational pipeline databases. We can also provide resources to perform the survey itself. We provide software tools that can seamlessly load survey data into a structured GIS database.

## ILI Project Management

We offer expert project management services for integrity related ILI assessments, including pre-inspection planning, the development of specifications and standards, vendor selection, process and procedures auditing, analysis of inspection results and recommendations for found anomaly mitigation.

## Risk Analysis

Novara provides consulting, engineering, field and technologically enabled geospatial services for threat, probability of failure, and consequence analysis. We can determine and manage risk for both pipeline and natural gas distribution systems in accordance with current PHMSA and state rulemakings as well as industry best practice.

**CONTACT US TO LEARN MORE ABOUT OUR INTEGRITY MANAGEMENT SERVICES!**

# Geospatial Services

OUR TALENTED TEAM OF GEOSPATIAL PROFESSIONALS IS DRIVEN BY CUSTOMER SATISFACTION AND OFFERS THE INDUSTRY EXPERIENCE AND TECHNICAL EXPERTISE TO TACKLE ANY PROJECT



GEOSPATIAL BEST PRACTICES

AFFORDABLE & SCALABLE

EASY-TO-USE GEOSPATIAL SOLUTIONS

**Novara GeoSolutions (Novara) is a multi-disciplined organization providing management, operations and regulatory consulting services, as well as technical and specialized GIS services.**

Novara's GIS services encompass a wide range of offerings, such as enterprise technology solutions, packaged GIS solutions delivery, Esri platform services, enterprise systems integration, data management services, and IT hosting/outsourcing support. We are committed to providing quality technology-driven solutions to geospatially enable and enhance the management of utility and pipeline system assets and infrastructure. In support of this goal, our staff provides a wide range of geospatial services, including needs assessment, database/data model design, system implementation, mobile data collection, data conversion, web-based and desktop mapping application development, spatial analysis, and cartographic map design.

Novara has completed thousands of large and small-scale projects for operators of hazardous liquid and natural gas pipeline systems, public and private utilities, governments, transportation agencies, and campus and institutional clients.

# Geospatial Services

## Our Services Include:

### Situational Needs Assessment, Feasibility Study

### GIS System Implementation and Integration

- Small, Single Application, Single User Solutions
- Very Large Multi-User Enterprise Solutions
- Deployable Across Multiple Platforms
- Packaged GIS Solutions Delivery, Esri Platform Services and Custom Development
- Collaborative Multi-Utility GIS Systems

### Data Management

- Data Conversion & Migration
- Date Integration
- Data Alignment
- Data QA/QC

THESE SERVICES ARE COST EFFECTIVE, SCALABLE AND FLEXIBLE TO MEET THE NEEDS OF ANY SIZED OPERATOR

### Visualization, Analysis & Reporting

- Spatial Analytics and Reporting
- Routing and Site Location Analysis
- Environmental Impact Analysis
- Operational Dashboards
- KPI Management & Reporting

### Mapping Services

- Alignment Sheet Generation
- Specialty Cartographic Map Production
- Public Involvement & Other Stakeholder Web Maps

### Field Services

- GPS Services
- Mobile Data Collection

### Project Tracking Applications

## BENEFITS

- > Long-term Esri Gold business partner
- > Exposure to geospatial best practice
- > Simple, easy-to use geospatial solutions
- > Affordable, useful and beneficial projects and solutions
- > Integrated mobile solutions

**LEARN MORE ABOUT OUR GEOSPATIAL SERVICES BY CALLING US TODAY!**



# Staff Augmentation & Outsourcing

A RELIABLE SOLUTION FOR OPERATORS WHO HAVE HAD TO CUT BACK ON STAFF AND RESOURCES YET ARE REQUIRED TO PRODUCE MORE

DO MORE WITH LESS

IMPROVE EFFICIENCY & EFFECTIVENESS OF OPERATIONS

CONTROL & REDUCE OPERATING COSTS

**Novara GeoSolutions (Novara) can serve as an extension to your engineering, compliance, integrity and GIS teams so you can meet your operating needs and get projects completed quickly and efficiently!**

Today's oil and gas industry is faced with unprecedented market, regulatory and operational challenges. Compounding these challenges, many operators have had to scale back staff and/or cut training and resource development, and in many cases, they need to run lean. They recognize that there will be more to do, and given the expected loss in experience and critical skills from a nearly 50% turnover in the current pipeline industry workforce over the next 5 to 7 years; they need to reconcile how to manage an increased operational and compliance obligation with fewer personnel and with less experience among those responsible for doing so.

At Novara — and through CHA Consulting, Inc. and our subject matter experts (SME) — we have the capability, industry experience, regulatory know-how, and resourcing availability to help operators fill this void. We have a more than 30-year history and proven track record providing consulting, technical services and geospatial-based software solutions for asset management, integrity management and regulatory compliance. In doing so, we have completed numerous projects and worked with hundreds of operators of crude oil, refined products and other hazardous liquid pipelines; natural gas pipelines; and regional and local utilities. We have also furnished these operators with temporary short-term and longer-term resourcing, have outsourced certain operational responsibilities, and have provided discipline specific expertise and staffing to augment their compliance, asset and integrity management departments.

# Staff Augmentation & Outsourcing

## Eliminate resource constraints

Operators can offset internal staffing constraints and shortfalls through Novara's support services. These services are offered on an "on-call, as-needed" basis; through dedicated on-site resourcing or under a collaborative outsourcing arrangement, where we serve as an extension to the operator's asset, compliance, and integrity management teams.

## Direct & immediate access to regulatory expertise, industry benchmarking & best practices

Where necessary and appropriate, our resources, and the operators they are supporting, have an Advisory Group consisting of leading industry personnel that have the credibility and knowledge to provide guidance and high-level best practice solutions to meet the operator's problems. They also have access to:

- CHA Consulting Inc., a highly diversified, full service engineering, construction management and field services group of companies serving public, private and institutional clients worldwide. With more than 1,400 professional staff and 50 offices globally, the firm offers a wide spectrum of services and serves several markets, including aviation, campus and institutional, environmental, government, land development, manufacturing, power and energy, rail and transit, sports, and transportation.

- An SME Select Team consisting of a list of independent sub-contractors from throughout North America with pre-established contract agreements in place that can be called upon to provide key elements of project support and to provide Novara resource balancing flexibility.
- Comprehensive Suite of Software Applications for asset data management; data alignment, input and integration; planning, engineering, and design support; regulatory compliance; integrity management; operational awareness/decision support; and mobile solutions for field operations.

## BENEFITS

- > Reduces operating costs
- > Offsets internal staffing constraints and shortfalls
- > Services offered on an "on-call, as-needed" basis
- > Improves compliance and integrity management effectiveness and efficiency
- > Direct and immediate access to regulatory expertise, industry benchmarking and best practices

## OUTSOURCING & STAFF AUGMENTATION SERVICE OFFERINGS

- Regulatory Compliance Advisory Services
- Integrity Management Program Improvement
- Compliance General Support
- HCA/MCA Analysis
- Class Location Analysis
- Liquid & HVL HCA Impact Analysis
- Overland Spill Analysis
- Air Dispersion Analysis
- Water Transport Analysis
- MAOP Calculation/Validation
- Pipeline Records Interpretation & Validation
- GIS & Mapping Services
- Data Management & Integration Strategy
- ILLI Data Management, Integration & Analysis
- Operational Improvement
- Pipeline SMS Implementation & Assessment
- Management of Change
- Professional Field Services

**LEARN HOW NOVARA CAN BE AN EXTENSION OF YOUR TEAM BY CALLING US TODAY!**

# Technology Solutions

THE IMPLEMENTATION AND DEPLOYMENT OF OUR OFF-THE-SHELF, CONFIGURABLE SOLUTIONS HELPS MANAGE THE ASSET LIFE CYCLE WHILE IMPROVING THE EFFICIENCY AND EFFECTIVENESS OF CLIENT OPERATIONS

← AFFORDABLE, USEFUL SOLUTIONS

← REDUCE OPERATING COSTS

← SCALABLE, EASY TO CONFIGURE

**Novara GeoSolutions (Novara) is the geospatial and asset management provider for CHA Consulting, Inc.**

Since its founding more than 30 years ago, Novara has been developing best practice software applications which fully leverage the Esri technology platform and are built specifically for the management of utility and pipeline system assets and infrastructure. Our customers are asset-intensive, asset-centric businesses with large capital investments in complex and “geographically dispersed” assets and operations. The custom software programs we have developed helps to ensure the safety and reliability of our customers' assets, their stewardship of the environment, their assets and operations compliance with applicable federal and state regulations, and the efficiency and effectiveness of their operations are improved.

To ensure continued evolution and alignment with the needs of these industries, Novara stays heavily involved in industry associations, workshops/forums, and other events of relevance. Likewise, the company, its regulatory compliance experts, and technologists are well-versed with both PHMSA and local state regulations, industry standards and recommended practices. Further, they keep current regarding the impact that advisory bulletins and notices of proposed rulemaking may have on the functionality and support these solutions will need to provide.

# Technology Solutions

## Software Solutions for Hazardous Liquids & Natural Gas Pipeline Systems

Using the Intrepid® platform, our technology solutions connect users with the data, analytic tools, and corporate knowledge they need to make the critical decisions that shape their company. Intrepid® is one of the more widely accepted “geospatial-based” solution suites on the market for infrastructure and asset management.

### Key Areas of Support:

- Pipeline and facilities asset data management
- Planning, engineering and design support
- Mapping and alignment sheet generation
- Regulatory compliance
- Risk and integrity management support
- Visualization, analytics and reporting
- Mobile computing for field operations support

- Leak management
- DIMP planning and support
- DIMP risk modeling and analysis
- Mapping and drawing production
- Query, viewing and reporting
- Regulatory reporting
- Management and executive dashboards
- Mobile computing for field operations support

## Mobile computing solutions for compliance & field operations support

Our Corrivo technology platform provides for “office-to-field-to-office” process management that helps pipeline operators and utilities in the planning, execution, documentation, management, and reporting of inspection, compliance, integrity, repair, O&M, and other in the field activities. Corrivo allows users to view program performance, eliminate paperwork, and quickly access field observations in real-time so that managers can make informed decisions.

### Key Areas of Support

- Work activity creation and close out
- Work activity assignment
- Bread crumb tracking
- Leak survey and investigation
- Leak detection device integration
- Leak monitoring and repair
- Non-leak maintenance and repair
- One call response integration
- Utility line locate
- Crossing inspections
- Excavation damage inspections
- Exposed pipe inspections
- General observations
- Map correction notes
- KPI monitoring and reporting
- Regulator Inspection

## GIS Solutions for Natural Gas Distribution Systems

We offer a GIS platform providing investor-owned and municipal gas utilities with a scalable platform to manage high, medium and low-pressure gas networks and to support and help improve their operations. Configure, implement and deploy this gas distribution GIS solution as a stand-alone or as a collaborative GIS solution supportive of gas, electric, water, wastewater, cable, fiber, and other utility systems.

### Key Areas of Support:

- Distribution network modelling
- Asset data maintenance
- Planimetric and topographic data management
- Corrosion control management
- Compliance management
- O&M activity tracking

## ADVANTAGES

- > Affordable, useful solutions
- > Scalable, easy to configure, easy to learn, easy to use
- > Compliance management and assurance
- > Traceability, verification, complete documentation
- > Process improvement
- > Efficiency and effectiveness
- > Increased operational awareness
- > Reduction in operating costs

**CONTACT US TO SEE HOW OUR SOLUTIONS CAN LOWER YOUR COSTS AND INCREASE PRODUCTIVITY!**



# INTREPID<sup>®</sup>

ACCURATE AND ACCESSIBLE INFORMATION  
DRIVES PROFITABLE PIPELINE OPERATIONS

EASY, FLEXIBLE DEPLOYMENT

ELIMINATE DATA REDUNDANCIES

REFINE AND IMPROVE PROCESSES

**Using the Intrepid<sup>®</sup> platform, we connect users with the data, analytic tools, and corporate knowledge they need to make the critical decisions that shape their companies.**

Intrepid<sup>®</sup> is an enterprise geospatial platform that is tailored to oil and natural gas pipeline industries at upstream, midstream and downstream. It incorporates a wide range of extensions, such as: solutions to perform HCA, Class, MAOP calculations, and ILLI data management as well as tools that allow alignment of ILLI or direct assessment data to existing centerlines. Users easily enhance their understanding of pipeline assets and leverage more data by connecting to various datasets through one centralized interface. Intrepid<sup>®</sup> opens up sharing and accessing information in a way that complies with government regulations and keeps your data current and compliant. Importantly, Intrepid<sup>®</sup> offers user-friendly workflows that allow staff to quickly learn the applications and maintain data without a technical GIS background. What's more, users reduce the risks associated with owning and operating a pipeline company by automating maintenance activity schedules and by using integrated information to proactively identify high risk areas. Use Intrepid<sup>®</sup> for data management, editing, querying, documentation of workflows, data governance rules, database structure and changes, reporting, and more.

# INTREPID®

## Conducting business is easier and more efficient

Supervisors and technicians find Intrepid® easy to use and easy to manage as the workflows are configured to meet their needs. There are defined workflows with tasks and preconfigured automation, which streamlines the workflows. Field users are given direct access to critical asset information so they can be more efficient in the field. Data collection is entered only once and is always available, and maps are easily accessible. As an example, customized workflows can be built for Planning, Engineering and construction support, Operations, compliance and integrity management, reporting, maps, and drawings.

## Use your technology of choice

Intrepid® integrates PODS and IPDM (Intrepid® Pipeline Data Model). The integration with PODS allows for the management of both spatial data and PODS attribute tables from a single, seamless software environment that can be deployed across multiple platforms and in a virtualized server network (on the desktop and in the field). It also supports clients on oracle and sequel platforms, which ultimately gives each client the ability to use their technology of choice.

## Seamlessly integrate with Esri technology

Intrepid® aligns the pipeline operator's needs and the Esri technology to provide a powerful geospatial solution. Its powerful tools support APR and UPDM. As an Esri Gold Partner, Novara supports all users and acts as a single point of contact for both Esri and Novara technology.

## PROVEN TRANSMISSION PIPELINE MANAGEMENT PLATFORM

### Designed to be used throughout the organization

There are two levels of Intrepid® to choose from depending on your required functionality: Intrepid® Standard and Intrepid® Advanced. Intrepid® Standard consists of non-spatial editing, navigation, analysis, and reporting. Intrepid® Advanced includes centerline, and feature editing capabilities, alignment sheet generation, Class & HCA calculators, and more.

Intrepid® simplifies IT complexity by helping your IT team accelerate the deployment of applications. Because of its open platform, it provides a path to integrate both legacy and cutting edge systems.

### Eliminate resource constraints

Novara offers a wide range of services, including spatial analysis and mapping services, GPS field data collection, alignment sheet generation, geospatial database design and implementation, data loading and validation, consulting and web-based GIS application development, and more. Novara can be an extension of your team so you can get projects completed quickly!

## ADVANTAGES

- > Centralizes data
- > Allows multiple enterprise systems to be integrated with a common interface
- > Unlimited user profile options
- > Bulk import/export options
- > Real-time PODS/SDE "Sync"
- > Supports Esri ArcGIS versions 10.1 -10.5
- > Complete route management capabilities
- > Calculates measures on the fly while supporting traditional Engineering Stationing references
- > Maintains domain tables
- > Robust compliance reporting capabilities
- > Supports tying of records & other electronic source data to pipeline events

**CONTACT US TODAY TO SEE HOW INTREPID CAN LOWER COSTS AND INCREASE PRODUCTIVITY!**

# Corrivo

ASSIGN, MONITOR, AND MANAGE YOUR COMPLIANCE, ROUTINE O&M OPERATIONS AND OTHER FIELD WORK...QUICKLY, EASILY AND EFFICIENTLY!



ELIMINATE PAPERWORK

IMPROVE FIELD ACTIVITIES

STREAMLINE WORKFLOWS

**Corrivo helps gas utilities successfully execute leak surveys in a defensible and trackable manner, plus improve data quality assurance through error reduction.**

Novara GeoSolutions' (Novara) solution allows users to manage and assign work, complete leak surveys, and view program performance. From office to field, this solution ensures users can easily schedule surveys and access, collect, report and map data. Corrivo has a low learning curve and updated interface that makes it simple to use in the office and field. Using an easy to understand map, field crews can capture and record field observations in real-time and then quickly and easily sync to the system of record. Plus, using a simple yet powerful management portal, executives can quickly assess the state of their organization or program and use the information to make safe, informed decisions with real-time data. If needed, it can be easily integrated with an existing work management system, as well as your detection equipment, so you only have to use one system.

## Corrivo

### Traceable, verifiable, and complete

Capture the regulatory information needed to protect the organization in case of an event. This solution gives users control to prioritize surveys and report on their process, and it enables support for all field operations, maintenance and 49 CFR Part 192 compliance work. This customizable solution allows for quick assigning and reassigning of crews and the review of data. By eliminating paperwork, users often see data improvements and increased productivity with this automated system. It also reduces overall project costs by ensuring surveys are 100% complete.

### Identify trends and devise new management strategies

The management portal is a web-based application that allows an organization's leader to see exactly what is happening inside the organization to make informed and actionable decisions. Executives can proactively view critical metrics, identify trends, and devise new management strategies. Through this, supervisors and executives can see leak survey program statistics, track field personnel, or individual leaks, and monitor day to day activities. The views are fully customizable so that executives can focus on what is important to them.

### Eliminate resource constraints

Novara offers a wide range of services, including spatial analysis and mapping services, GPS field data collection, alignment sheet generation, geospatial database design and implementation, data loading and validation, regulatory consulting, web-based GIS application development, and more. Novara can be an extension of your team so you can get projects completed quickly!

## GAIN CRITICAL INSIGHT INTO FIELD ACTIVITIES AND ELIMINATE PAPERWORK.

### Consistent and high-quality data from the field

Eliminate paperwork and empower field crews to capture data in a way that makes sense to them! All the information is right in front of them on this Esri-based field solution, which makes taking paper into the field obsolete. Field crew performance will improve because work is clearly listed and forms walk them through what information they need to collect. They can sort assignments by date or volume of work and drop pins for leak indications.

### Increase your ROI by maximizing your existing systems

With Corrivo, there is one fluid process that integrates with your ERP/EAM, WMIS, MMS, CIS/COS, GIS, and EDMS systems. This solution simplifies the workflow and works with your existing systems, so you get the most out of your investments. It features a seamless two-way interaction between the field and corporate back-office systems of record.

## ADVANTAGES

- > Integrate with existing work management systems
- > Quickly assign and complete Leak Surveys
- > Extendable to capture other data
- > Attach and annotate photos
- > Analysis of field productivity
- > Work in connected and disconnected modes
- > Interactive mapping
- > GPS integration and breadcrumb trailing
- > Integrated mobile solutions
- > Reporting through tabular reports
- > Easily track billable items

**IMPROVE SAFETY RATINGS AND DECISIONS BY INCORPORATING CORRIVO INTO YOUR WORKFLOW!**